ably been more carefully studied than that of any other southern state, thanks to the extended explorations of Dr. Mohr and others, too little is known even yet of the actual details of plant distribution and habitat relations in this or any neighboring state to warrant us in theorizing much on the subject at present. Later investigations in other parts of Alabama have led me to suspect that some of these outlying stations for coastal plain plants are not as isolated as has been supposed, but it will take some time to confirm this suspicion.

It is rather singular that many of the coastal plain plants above mentioned, even the rock-loving ones, seem to be confined in the mountains to the immediate vicinity of the larger streams. When this is satisfactorily explained we will perhaps have the key to the whole situation. But a great deal more careful field work has got to be done before this and analogous problems in other parts of the world can be solved.

Geological Survey of Alabama.

TWO NEW AND SOMEWHAT ANOMALOUS BLACKBERRIES

By W. H. Blanchard

The first plant now to be described must be placed with the dewberries though it is slow in getting down to the ground, and in vigorous plants the thick base of the canes is often two feet high the second year. The leaves on strong, new canes resemble those of *Rubus nigrobaccus* Bailey; the abundance of unequal glandular hairs suggests the *setosus* class, while the inflorescence and energetic tipping are manifestly typical of the dewberry. Therefore I propose to name this interesting plant

Rubus permixtus sp. nov.

Plant recurving and mostly prostrate with abundant glandular hairs of varying lengths (not the large glands with short stalks of *R. nigrobaccus*).

New canes. — Stems erect at first and from one to two feet high, recurving and running on the ground from three to six

feet, at length branching and tipping freely, stout and pentagonal at the base. Prickles of fair size but rather weak and not numerous, on the angles or in rows over the angles of the pentagonal pith, these grading into small prickles set at random and into glandular bristles passing into glandular hairs. Leaves of moderate size, dark yellow-green and slightly hairy on the upper surface, lighter and pubescent below, 5-foliolate on vigorous canes. Leaflets oval, short-pointed, the middle one quite broad, over one-half as wide as long and rounded at the base; the others narrower and broadly wedge-shaped, finely and doubly serrate-dentate, outline otherwise entire. Petioles and petiolules grooved, stout with weak, hooked prickles and abundant glandular hairs both bristly and slender; the petiolule of the middle leaflet three-fourths of an inch long, the lateral ones short and the basal leaflets sessile.

Old canes. — More prostrate, the prickles and glandular hairs but little impaired, and in protected places the leaves of the previous season sometimes persisting. New growth upright, polymorphous, one and two leafy branches or stemlets from each old leaf-axil, the axis zigzag, three to twelve inches high, nearly terete, with a few weak prickles, abundant unequal glandular hairs and non-glandular pubescence. Pure leafy stemlets few, resembling new canes, leaves on them 3- and 5-foliolate; the other growth 3-foliolate or on some vigorous stemlets 5-foliolate below; leaflets rather broad, short-pointed, all leaves on old canes closely resembling those of new canes in color, serration and pubescence. Stemlets tipped with a racemose, irregular inflorescence, five- to fifteen-flowered; flowers on slender pedicels set at a small angle with the axis, mostly subtended by small bracts, occasionally by an unifoliolate leaf. Flowers one inch broad; petals oval, regular in shape, two-thirds as wide as long. Fruit black, sweet, very edible, rather small, short-cylindric, one-fourth to three-eighths inches long, drupelets rather large. Flowers in early places June 1; fruits the middle of July, continuing in fruit in moist rich situations till September 10 or even later.

In open places in dry or rich ground. Frequent in an area with a radius of two miles partly in the northeastern part of Putney, Vt., and partly in the southeastern part of Westminster, Vt.

My first acquaintance with this peculiar species was in June, 1902. It grows in the immediate neighborhood of my home and I am continually finding new stations by the roadside, by fences

in mowings and in other neglected places. In dry, sunny, well-fed pastures and in other similar situations, the epidermis and its appendages are a deep red, while in tall grass or light shade they are often very green. It spreads widely by tipping, and the new plants thus originated as well as the new stems of old plants are at first very highly colored, very thick, fleshy, and bristly.

Whether this plant originated as a hybrid or as a mutant, whether it is a direct creation or is to be explained by one or more of the hypotheses sure to be invented in great profusion in the future, I shall not discuss ; but it is here and seems to be as good a species and as well worthy of a name as any rose, knotweed, aster, golden-rod or oak with which I am acquainted.

The second plant to which attention is invited is a leafy high blackberry. This is erect, strong and stocky, glandular and pubescent, and the old canes are very leafy, especially when somewhat killed back on rank-growing canes. The appearance of the plant in dry and in rich moist situations but a few rods apart is considerably different. It may be named with good reason

Rubus frondisentis sp. nov. Leafy Bramble

Plants with a great abundance of large, stalked glands.

New canes. — Stems erect, never reaching the ground, three to five feet high, stocky, soft, often branched, more or less pentagonal and often slightly furrowed, with remarkably numerous stalked glands. Prickles weak but not bristly, varying much in size, the larger mostly on the angles, the smaller set at random, less than three-sixteenths of an inch long, straight with a slight backward slant. Leaves of fair size, seven inches long and wide, not thin, 5-foliolate, yellow-green above with white appressed hairs, lighter below and quite pubescent and velvety to the touch. Leaflets broadly ovate, pointed, finely and doubly serrate-dentate, outline otherwise entire, rounded at the base, the middle leaflet over one-half as wide as long, sometimes cordate, the others narrower. Petiole and petiolules grooved above, very glandular, prickles fine, weak and recurved, the petiolule of the middle leaflet one inch long, those of the side ones one-half inch long, the basal ones short.

Old canes.— Erect, prickles and glandular covering somewhat impaired. Second year's growth consisting normally of thick,

short racemes above, and long leafy branches tipped with inflorescence below, one from each old leaf-axil; more often, the stem killing back, two or more leafy fruit-branches from the axils of each old leaf. Terminal racemes two to four inches long, very pubescent and glandular, about 10-fruited on short pedicels subtended by small bracts and with a few small leaves at the base. No pure leaf-branches yet observed. The branches below four to eight inches long with 3-foliolate leaves. Leaflets broad, yellow-green, rounded at the base, short-pointed, rather coarsely serrate-dentate, hairy above and pubescent below. Axis seldom terete, prickles few and weak, very pubescent and glandular. Infloresence short, often many of the six to ten pedicels subtended by large bracts or small unifoliate leaves. Flowers from one to one and one-fourth inch broad, petals long-oval, one-half as wide as long. Fruit small, cylindric, one-fourth to three-eighths inch long, black and edible, drupelets rather large, often but few ripening. Flowers the middle of June, fruit ripe early in August. Very little good fruit.

Type station, Townshend, Windham County, Vermont, in the immediate neighborhood of the brick school house situated near the residence of Deacon J. O. Follett and in his lot adjoining.

I first noticed this plant July 5, 1902, and have repeatedly visited the type station. Plants quite similar to these grow in three other places in Townshend and I have one station on Bemis Hill in Athens, Vt., a few miles distant. Another station is on Signal Hill, Alstead, N. H. The plants at all these stations differ a little from each other, but even at the type station a difference in soil and surroundings causes a considerable variation. This is to be expected nearly everywhere in the rose family.

Westminster, Vermont.

THE EARTHQUAKE AND THE CALIFORNIA ACADEMY OF SCIENCES

The following graphic and interesting account of a most lamentable event was written with no expectation of seeing it in print, but its author, Miss Eastwood, has kindly consented to its publication, with modest apologies for its personal tone. The author has not had the opportunity of reading proof. [Ed.]